DOCUMENT RESUME

ED 059 447 AC 012 308

AUTHOR McKee, John M.
TITLE Materials and Technology of Adult Basic Education for Corrections.
PUB DATE Feb 71
NOTE 12p.; For presentation at the Regional Seminar on Delivery Systems of Adult Basic Education in Corrections (Feb. 8, 1971, Athens, Georgia)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Adult Basic Education; Behavioral Objectives; *Correctional Education; Educational Problems; Evaluation Techniques; Feedback; Individualized Instruction; *Instructional Materials; Learning Processes; Models; Operant Conditioning; Problem Solving; Programed Instruction; Standards; Student Participation; *Technology; Time Factors (Learning)
IDENTIFIERS Alabama; *Draper Model

ABSTRACT

The problem of what set of instructional materials and equipment and entire instructional systems to use is presented, with specific reference to the area of Correctional Adult Basic Education (ABE). In setting up an ABE program, the initial order of business is to construct a viable model, one that insures that rapid and significant learning will occur for those participating in the program. Operant psychology has provided many practical applications to the problems of education. Programmed instruction (IPI) is an example of such an application. Several essential criteria by which the educator can design and evaluate learning material are: (1) Explicit behavioral objectives should be set forth in a manner which lends them to measurement; (2) Validation data should be provided by the publisher of the materials; (3) Trainee-oriented instructional increments are a desirable characteristic of instructional materials; (4) Active student participation is another desirable characteristic of an instructional product; and (5) Instructional materials should provide the student with immediate feedback of his learning progress. An advanced model of IPI for ABE is in operation at Draper Correctional Center, Elmore, Alabama. It is concluded that for efficiency of learning, ABE materials should be programmed in sequence, modularized, and presented in a manner that permits frequent feedback of the learner's progress. (CK)

ED 059447

MATERIALS AND TECHNOLOGY OF ADULT BASIC EDUCATION FOR CORRECTIONS*

John M. McKee
Rehabilitation Research Foundation
Draper Correctional Center

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Materials of Adult Basic Education

The Problem

The educational establishment does not seem to be short on instructional materials and equipment. So many have been published in the past decade that clearinghouses have been set up to record and catalog them; state and regional "educational laboratories" created to disseminate them; media centers founded to present them using the latest audiovisual equipment -- to "insure learning by employing all the senses" -- the eye, the ear, and the touch. Salesmen have been employed by the thousands to demonstrate the superiority of one set of materials or piece of hardware over the others. Entire "systems" are marketed – from elaborate reading programs and "packages" to complex computer-assisted instructional systems.

The problem for education: what "system" or media to buy. *The result*: unprecedented stocking, little systematic evaluation. *The coincidence*: the rates of reading deficiencies, illiteracy, and dropout statistics remain unaffected. New "national commitments" continue to be formulated, resulting in the allocation of hundreds of millions more in tax funds. *The lesson*: the present educational effort, for all the fine work that may be going on, is not correcting the growing number of educational deficiencies, to say nothing of preventing them. *The answer*: no one can say; but it is clear that public education will not discover it in the ever-increasing deluge of texts, programs, machines, systems, and promoters. Unfortunate, too, is the notion on the part of many users of these educational products that they are really "experimenting" and determining which is better. This belief provides a false validity and a false scientific justification for the *choices made.*

---

*To be presented at the Regional Seminar on Delivery Systems of Adult Basic Education in Corrections in Athens, Georgia, February 8, 1971.

AC012308

Cynicism and disillusionment are the expected results from such unfounded and unjustified claims about educational products. In corrections such claims have been stretched to their elastic limits. Not uncommonly do we witness sweeping, confident articles maintaining magnificent effects from disproportionately limited means. Literacy, a GED, or an occupational skill, all relatively narrow educational gains, are supposed to significantly prevent or deter crime. Some even go so far as to allege that a particular format of an educational product, for example PI, will effect recidivism reduction.

But correctional ABE need not reach so far for its behavioral objectives; in many ways it cannot. How much of the variance in recidivism and crime rates is accounted for by the presence or absence of basic education skills is difficult to determine; the nature of the individual, the variables in the community and family, and a resume of other variables are all factors influencing the effect or lack of effect of basic education on recidivism and crime.

An ABE program in corrections gets its *raison d'etre* not from promising a menu of unrelated and perhaps unattainable results, but from the fact that ex-offenders lack the education and employment skills necessary for participating in the American economy. Unemployment rates, of course, document this lack of participation. *U.S. Manpower in the 1970's* records unemployment among ex-offenders, in all groups classified, to be higher than their corresponding male civilian counterparts in respective groupings; in each group the average ex-offender unemployment is 10 percent greater – surely ample motivation to focus the objectives of education and occupational training on their justifiable goal – jobs.

Similar to the hazard of operating correctional ABE programs on sometimes misdirected and unjustifiable objectives is the risk involved in improperly ordering the steps in developing an effective basic education program *for corrections*. Correctional educators frequently ask, as their first questions, what should an ABE program in a prison consist of? How would it be tailored to the setting and population? How should it work? How should we train teachers in ABE concepts? These questions, of course, are legitimate and relevant, but they are only so when we have dealt with matters of first priority.

The initial order of business is to construct or pull together a viable ABE model, one that insures that rapid and significant learning will occur for those participating in

the program. Questions about *specific* motivation, specific scheduling, particular space arrangements and logistics, etc., all matters of concern relative to "tailoring" or modifying to a special setting, are important only after the opportunity for effective learning for any adult learner has been confirmed. In the proper ordering of priorities, then, development of the best (most effective, results-producing) model comes first, for, without this step, adapting to a particular setting, to a prison, OEO project, or public school, becomes most difficult.

Contributions of Behavior Science to Materials Preparation and Evaluation

An increasing number of important contributions which hold promise for improved design and evaluation of educational products have emerged from the behavioral laboratory. The experimental analysis of behavior – operant psychology - has provided many practical applications in recent years to the problems of education. Programmed instruction (PI), an example of such an application, has been largely responsible for the current emphasis on behavioral objectives – terminal specifications. The programmer must state what the student can *do* as a result of having been taught. He can't say that his program is to "impart knowledge," or teach the student "to appreciate." It is perhaps fair to say that this single contribution of operant conditioning, via programmed instruction, has led to a small revolution in the educational establishment. Boards of education are engaging in performance contracting and studies in cost-effectiveness, and school officials are insisting that the materials they purchase contain specific statements about what the student will be able to *do* if he goes through a course or program.

Another application deals with the issue of how the student learns. The principle of "shaping" through successive approximations has an important bearing upon the format and manner of presentation of instructional materials. A complex skill, such as using fractions, is "shaped" in step-wise fashion. Other quite complex forms of behavior can be generated, often with amazing speed, through a series of stages leading to the terminal specifications. Changes are obvious and visible and no statistical tests are necessary to confirm either to the teacher or student that conspicuous learning has taken place – both know immediately.

The following is a summary of several essential criteria, derived from the behavioral laboratory, by which the educator can design and evaluate learning material:

1. Explicit behavioral objectives (terminal specifications) should be set forth in a manner which lends them to measurement. The instructor or student, then, could determine whether the skill or knowledge was attained. When one has determined what the student needs to know, these needs can be matched to the purposes of the instruction as stated behaviorally and measurably in the explicit learning objectives.
2. Validation data should be provided by the publisher of the materials. If the material "works" – meets its objective – it is said to be valid. The relevant data here are test results which show that the trainees have really learned to do what the instructional product was designed to teach them to do. While objectives tell what trainees should be able to do after completing the instructional material, they do not indicate the best conditions under which trainees should study the material. The conditions under which the trainees of the validation-test group studied – their learning environment – is included in the validation data. The trainees' educational background and other relevant characteristics are also reflected in the validation data.
3. Trainee-oriented instructional increments are a desirable characteristic of instructional materials. "Oriented" means "designed for" or "in consideration of." Increment means "act of increasing" and "that which is added." Products with this feature are reinforcing to the learner because they clarify progress, have a definite size; the student knows when he is halfway through and when he has finished. The size (functional *not* physical) and the sequence of each unit of instruction are determined and set on the basis of how *much* and how *fast* the trainee can readily and surely learn. This is often done by having the student "try out" the instruction, which is then revised according to the problems experienced by the trainee.

   Instruction that is designed *for the trainee* (*not* to please technical specialists in the subject field) to insure his success in learning will tend to produce trainee confidence in the specific instruction and the learning experience generally.

   Trainee-oriented materials also mean, for adult learners, that they be mature in illustrations, concepts, and language. An improvement in reading materials

in this respect has been very slow in coming. Even now, much of the instructional content is presented in a slightly modified children's text or program. Undoubtedly, this situation will change shortly, for the demand is there and appropriate materials will certainly sell.

4. Active student participation is another desirable characteristic of an instructional product. This feature insures trainee involvement and helps to maintain interest in learning. It also produces an overt (obvious) response – writing answer, checking answer, etc. - that can be used to great advantage.

5. Instructional materials should provide the student with immediate feedback of his learning progress. Knowledge of results – feedback – is crucial to all learning, because the student is taught not by mere repetition of the acts to be learned, but by certain consequences that follow from these acts. The consequences that are found to strengthen these responses are called "reinforcers."

Immediacy of feedback is an essential principle of learning theory. Since reinforcers strengthen responses that appear immediately prior to reinforcement, the greater the delay between occurrence of the response and the reinforcer, the less likely learning is to occur. The need for immediacy of feedback cannot be overstressed. Though it is perhaps the most important single factor in learning, it is also a principle which is frequently violated.

All too typically, a problem which arises out of a delay in reinforcement is that of competition between the reinforcers supplied by the teacher and the reinforcement supplied by the student himself. Left to his own devices, the student will attempt to perform some of the acts involved in an assigned task, and, in lieu of immediate knowledge from the teacher that he is either correct or incorrect in what he has done, he often supplies his own reinforcement; he is acting in accord with all major learning theories, working toward the most common reinforcements available, task completion. The risk and the probability in this case, obviously, is that the student will reinforce himself even after incorrect performance. However, even though the student may have reinforced an incorrect response, the effectiveness of the reinforcement supplied by the teacher at a later time (say 24 or 48 hours after the task was assigned) is markedly reduced.

While the above characteristics are important for any adult learner, they are essential for the public offender. He, above all, needs to experience a successful basic education learning experience. In most cases with inmates, the past consists of recurring encounters with teachers who, because of the absence of effective learning technology and materials, found it necessary to resort to aversive control methods to force the student through the learning ritual. But the learning system under discussion here, that based upon criteria established in the behavior laboratory, does provide the possibility to change and improve upon the past, to offer a system which pulls the student forward, which allows for active participation and frequent feedback, and which, when properly sequenced, relies not upon force but upon motivation to lead the student through the learning achievement.

Programmed Instruction Meets the Criteria

Materials that best fit the above requisites are *programmed* instructional products, and there are many of them on the market, varying to be sure, in quality and format. Some of it is bulky and lengthy and treats many deficiencies; other programs are in smaller units or modules and can provide the student with an early sense of task completion and, hence, progress. "Closure" or task completion, it should be remembered, can be very reinforcing to the learner.

Programmed materials are most available from the fourth-grade reading level or up. Some programs exist for illiterates, such as phonics and early reading programs, but there is a dearth of effective materials and techniques in literacy education for adults, perhaps because neither the publisher nor the federal government have supported research and development in this area. However, programmed materials for GED preparation abounds, though the materials in social studies and the teaching of reading within the GED preparation remain weak areas.

Particularly noticeable is the absence of programmed material related to occupational training; and there is a demand for it. Vocational educators ask for it because they know PI's value from at least one standpoint: it can increase the likelihood of a student's responding to basic education because it can individualize the study. A student in vocational training is more apt to respond to something like a course in fractions if he can relate it directly to his occupational preparation. Students in auto-mechanics or bricklaying can take a course in fractions for auto-mechanics or measurements for bricklayers.

However, while vocational educators may see the value of basic education for occupational training, they are likely to insist on a student's learning only those skills or that knowledge which is directly related to achieving his occupational goal; and this causes difficulty for curriculum designers. Task analyses, to determine exactly how much math, reading, language skills, or social skills are required for a given occupation, have been performed on but a limited number of occupations or occupational clusters. Consequently, the capacity to prescribe individual basic education programs is limited accordingly.

Dilemma of Social Skills Training

Undoubtedly, the most perplexing of all questions falls in the area of social learning, sometimes referred to as "personal-social skills development." There are few curriculum experts in this field, mainly because they lack "hard data" from the job site – data which inform them as to the specific behaviors to be learned, their priority and weight. Another complicating variable is produced when the sources of data confuse objective criteria with value judgments. For example, as strong as the work ethic is in our society, it is not necessarily the *sine qua non* of success on parole. Employment appears to be correlated with non-recidivism, but not as high as "common sense" (colored by value judgments) would maintain. In fact, variables affecting recidivism are dynamic (interacting) and differ in many dimensions – time, circumstance, place, people involved, rules of parole, etc. It is little wonder, then, that few solid training materials and techniques exist in social skills development, for we can't say exactly what we should be teaching in this subject matter domain. We do suspect, however, that whatever is taught should be tailored to fit individual deficiencies. But unlike tests of academic achievement, none exist for assessing the offender's social-skills deficiencies.

The Technology of Instruction

The 'Contingencies of Reinforcement'

What has been described to this point – the "stimulus materials" – constitutes the occasion or stimulus conditions under which learning will take place. The operant learning model demands the consideration of two other variables – the response and the reinforcing contingency. While consequences of the response are crucial to learning

because of their relationship to motivation, motivation is not generated by rewards and punishments alone. As Skinner (1970) says, "The contingencies, rather than the reinforcers, are the important things. The 'reasons' why men behave are to be found among the consequences of their behavior – what, to put it roughly, they 'get out of behaving in given ways'" [p.21].

The threefold contingencies of reinforcement -- stimulus - response - consequence – would seem to generate automatically a systems approach to adult basic education. In fact, it has been observed that PI works best in the context of a total system (McKee, 1970). PI has created the possibility of an individually prescribed instructional (IPI) system. Specific modules or units of instruction can be prescribed and learning achievement quantified and evaluated to a refined degree. "Contingency contracts" can be negotiated between the manager and learner, and reinforcing consequences scheduled. The new technology of instruction also permits an instructor to teach more than he knows. The program actually teaches – through the interface with the learner and manager-arranged consequences of the learner's responses. In Skinner's (1969) words, "we are on the verge of a...new pedagogy – in which the teacher will emerge as a skilled behavioral engineer."

The Draper Model

An advanced model* of IPI for adult basic education is in operation at Draper Correctional Center, Elmore, Alabama. This IPI system consists of the following sequential activities:

1. Diagnosing the learner's deficiencies and entry skills with a standardized achievement test
2. Prescribing, in sequence, remedial modules from programmed materials
3. Conducting a reading laboratory – from literacy training to the level required to pass the GED test
4. Managing the learning contingencies
5. Evaluating the learner's progress

---

*This model was developed as a part of a larger MDTA project, which was funded by the U.S. Department of Labor, Contract No. 82-01-69-06.

One important contribution of the IPI system is that it largely eliminates "over prescribing." Frequently, a diagnostic test indicates that the learner needs help only for some, not all, of the many classes of deficiencies treated by such a program as *English 2600*. The IPI system automatically prescribes only those frames or parts of a program that treat a class of deficiencies indicated by a specific, missed item on the diagnostic test. The IPI system is so designed that a learning manager, by simply following its step-by-step instructions, can accurately diagnose learning deficiencies and precisely prescribe for them even if he is not familiar with either the programmed materials or the diagnostic test.

Preliminary Data on the System

An analysis of student performance demonstrates overall effectiveness of the IPI system. However, certain areas appear to be better covered than others by the prescription process. For example, gain in arithmetic fundamentals were significantly higher than all other subtest gains. Total reading scores were lowest – no doubt because reading was not prescribed for the group on whom preliminary data were obtained. Future data will be gathered on subjects with reading prescriptions, and it is anticipated that improved reading scores will result.

Experimental work is currently under way at Draper to isolate the effects of several important contingency management variables, including the contingency contract, money as a reinforcer, the effectiveness of penalties, and self-management of the subject's learning contingencies. The principal dependent variables are rate of responding to PI materials, accuracy on tests, and standardized achievement test gains.

Status of Teacher Training Materials

The IPI system described in this paper is being put in a form to train ABE instructors in its use. Beginning in February, 1971, the system will undergo testing and evaluation, following which it will be made available to correctional institutions and other adult basic education programs. Workshops will be established to train users of the system.

Performance Contracting

An interesting development in educational technology is *performance contracting*, which already is taking on the appearance of a "movement." A performance contract is a legal agreement between a school board and a private profit-making educational firm,

such agreement specifying a guaranteed student performance after a fixed number of instructional hours. For example, one firm receiving an OEO contract, guaranteed to raise 1,000 public school students one grade level in reading in 90 days for a cost of $100 per student. The company will receive no payment for any student who fails to attain that level.

Performance contracting reflects basically the spread of accountability or cost-benefit analysis to public education, which could very well use it. School board members are becoming aware that the public is intensely dissatisfied with the failure of our educational system and frequently shows its displeasure by refusing further taxation for schools. Moreover, board members appear to be "losing confidence in teachers' dedication to learning and are beginning to feel that approaches such as performance contracting can make teachers accept more responsibility (*Education Turnkey News*, November, 1970, 1, No. 8, pp. 1-2)."

Public confidence, it is argued, can be regained by offering some measurable, believable proof of accomplishment. The result may well be performance clauses in contracts with teachers as well as with private companies.

Conceivably, the whole accountability concern got its thrust the day the eminent behavioral scientiest, B.F. Skinner, said, "The student is always right" -- meaning that his behavior follows lawful principles whether the answer he gives is correct or not. Since that day, the educational establishment could no longer blame the child for his failure without being severely challenged, for whoever arranges the contingencies of reinforcement will be held accountable for any results obtained.

With regard to performance contracting, two important observations are relevant to adult basic education. One is the accountability issue would be hard pressed to find support if instructional technology had not made the advances it has during the past decade. Behavioral objectives, programmed instruction, individualized instruction, contingency management – all contributed to the notion that we can now expect *results* and they can be *measured*. The second observation is that accountability is just around the corner for ABE programs. What will be the chief characteristic of the good ABE program? One that achieves its behavioral objectives in the most efficient and effective manner. And if accountability for ABE in public education has about arrived, one can be assured the

same yardstick will be applied to ABE in corrections, where all sorts of accountability measures are long overdue.

Conclusion

For efficiency of learning, materials for adult basic education require a special format. Ideally, they should be in programmed sequence, modularized, and presented in a manner that permits frequent feedback of the learner's progress. Programmed materials have the added advantage of fitting into an IPI system, which includes contingency contracting, a token economy with backup reinforcers contingent upon specific performance, and pinpoint evaluation of the learner's progress and of the system itself.

Evaluation of materials and media for presentation should be effected upon criteria established by a behavioral model of learning. Evaluation guides are available from several sources, including the Rehabilitation Research Foundation (Seay, Terry, 1967; Wallace, 1970).

The next few years should reflect significant advances in adult basic education for corrections, but a basic model, applicable to a wide range of settings, will very likely materialize first – and probably should. Efforts of systematically relating basic education to vocational training are lagging and until methods and strategies are devised to accomplish it, instruction will be less efficient and effective, and less motivating and meaningful to the adult learner. Meanwhile, correctional educators will be attempting to tailor the contingencies of reinforcement of IPI to a variety of correctional programs.

References

McKee, J.M. *The use of programmed instruction in correctional institutions.* (Published in **The Journal of Correctional Education,** Fall, 1970, **XXII** (4).

Seay, D.M., & Terry, M.T. *Development, evaluation, and use of programmed materials.* Elmore, Alabama: Rehabilitation Research Foundation, 1967.

Skinner, B.F. *Contingency management in the classroom.* **Educate,** 1970, **3,** 20-25.

Wallace, J. *How to evaluate and select programmed instructional materials.* Elmore, Alabama: Rehabilitation Research Foundation, 1970.

ERIC Clearinghouse
MAR 14 1972
on Adult Education